

Revolutus spinosus: A New Genus and Species of Akermaninae (Isopoda: Oniscidea: Armadillidae) from Queensland

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Specimens of a new species of Akermaninae have been found in two localities of Queensland. They show some similarities to *Laureola* and *Echinodillo* but do not totally agree with the diagnoses of these or any other genera. A new genus, *Revolutus* is proposed for a new species, *Revolutus spinosus* sp. nov.

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INTRODUCTION

Nine genera are presently assigned to the Akermaninae: *Akermania* (Collinge, 1919); *Calmanesia* (Collinge, 1922); *Diploexochus* (Brandt, 1833); *Echinodillo* (Jackson, 1933); *Globarmadillo* (Richardson, 1910); *Laureola* (Barnard, 1960); *Parakermania* (Vandel, 1973); *Pseudolaureola* (Schmalfuss and Ferrara, 1983, *nom. nud.*) and *Tridentodillo* (Jackson, 1933) (Green, 1989, pers. comm.).

Australia has representatives from only three of these, *Pseudolaureola* and *Laureola* (Vandel, 1973) — amended by Schmalfuss and Ferrara in 1983 — and *Echinodillo* (Green, 1963). Schmalfuss and Ferrara (1983), also suggest that *Laureola* (Barnard, 1960), may be a synonym of *Echinodillo* (Jackson, 1933).

The new species is an interesting addition to the Australian oniscid fauna requiring the erection of a new genus.

SYSTEMATIC DESCRIPTION

Revolutus gen. nov.

Type species: *Revolutus spinosus* sp. nov.

Diagnosis: Frontal ridge of cephalon cleft medially; eye composed of 13-15 ommatidia; telson cleft posteriorly; 2nd to 7th epimera subquadrate in shape; very small and shallow articulating lobes on 1st and 2nd epimera; tubercles on cephalon and on anterior pereon segments extended into spines on 4th to 7th pereon and 2nd to 5th pleon segments with those on the pereon being the longest; no median spines or tubercles; telson, uropod protopod and all epimera except 1st recurve strongly upwards in males but less so in females.

The name derives from the shape of the epimera and the tergal ornamentation; *revolutus* (L) = recurving, *spinosus* (L) = spiny.

Revolutus spinosus sp. nov.
(Figs 1-3)

Holotype: Male, Australian Museum, Sydney (P39123).

Type Locality: Atherton, Queensland, 17°165'S, 145°29'E; under tree roots on bank of dry creek, September 1988, F. Lewis.

Paratypes: Male and female. Australian Museum, Sydney (P39124); Queensland Museum, (QMW 15791), collection and locality data as for holotype; Tasmanian Museum (G3303), Goldsborough Forest Road/Mulgrave River crossing, near Bellenden Ker, Queensland; in moist leaf litter on river bank, September 1988, F. Lewis.

Size: Length 7 mm, breadth 4 mm. **Colour** (live): pale cream with dark bands along midline and lateral margins of epimera and midline of pleon; antennae dark. **Cephalon:** eye of 13 ommatidia; frontal line of vertex cleft medially and extended laterally into rounded angles; 4 tubercles near midline, 3 larger on each side near eye; posterior margin raised medially. **Second antenna:** short, slender, with scattered setae, 1 large seta on anterior side at distal end of last peduncular article; two articulated flagellum shorter than last peduncular article; 2nd flagellar article 3 times longer than 1st, ending in group of long setae joined for most of length. **First maxilla:** bilobed, outer lobe longer, terminating in 9 curved teeth of varying size, 4 largest outer teeth heavily chitinized, inner lobe terminating in 2 short, stout, setose pencils. **Maxilliped:** endite terminating in 3 long tufts of setae with tooth on inner side; the endopod with large pencil and 2 long spines on inner side, 1 spine on outer side at base. **Pereon** pereonites lightly granulated, small rounded scales cover dorsal surface; tergites distinctly decorated with tubercles extended into long spines on segments 4-7. Epimera without tubercles, increasingly upturned posteriorly, lateral borders thin; all except 1st sub-rectangular; epimeron 1 extends anteriorly below eyes with posterior angle extended into rounded point; lateral border not thickened, small, shallow, articulating lobes on ventral surfaces of first 2 epimera. **Pereopods:** merus, carpus and propodus, shorter and stouter on pereopods 1-2, all have fine scattered setae and large spines on inner margins, dactylus terminating in chitinous claw with 2 spines on inner side on all pereopods. **Pleon:** pleonites 1 and 2 visible dorsally; epimera 3-4 squarely truncated and upturned; epimera 5 narrow, produced into rounded point also upturned; pleonites 2-5 with 2 tubercles extended into spines on posterior borders. Lateral margins of telson indented, posterior margin deeply cleft forming 2 upturned, pointed lobes; 2 tubercles near anterior border of telson. **First pleopod:** exopod approximately oval; posterior margin slightly produced into 3 lobes; endopod apex slightly upturned. Tracheal area on outer part of all exopods. **Second pleopod:** exopod with medial border extended posteriorly to point, spines along convex lateral border; endopod longer, very slender. **Third pleopod:** exopod with medial border slightly extended posteriorly; this extension decreases progressively in pleopods 4-5 which are otherwise similar to pleopod 3. **Uropod:** protopod extended into long lobe with concave lateral margin; exopod $\frac{1}{2}$ length of lobe, inserted dorsally, terminates in bunch of long setae; endopod longer than exopod, shorter than lobe; terminating in bunch of long setae.

Remarks

Females differ from the above description as follows: the epimera are less upturned and the spines are shorter (Figs 3b, 3c). Breeding specimens have a triple branching broodpouch cotyledon centrally positioned on each of segments 2-5. The number and position of cotyledons has been found to be characteristic of a species (Lewis, 1991).

The species diagnosis is the same as the generic diagnosis.

DISCUSSION

The oniscids from Atherton and Bellenden Ker represent a new species which cannot be placed in any of the nine existing genera, according to the generic diagnoses which are current (Green, 1989, pers. comm.).

They have some characters diagnostic of the three Australian genera but the subquadrate shape of the 2nd to 7th epimera and the cleft cephalon and telson exclude

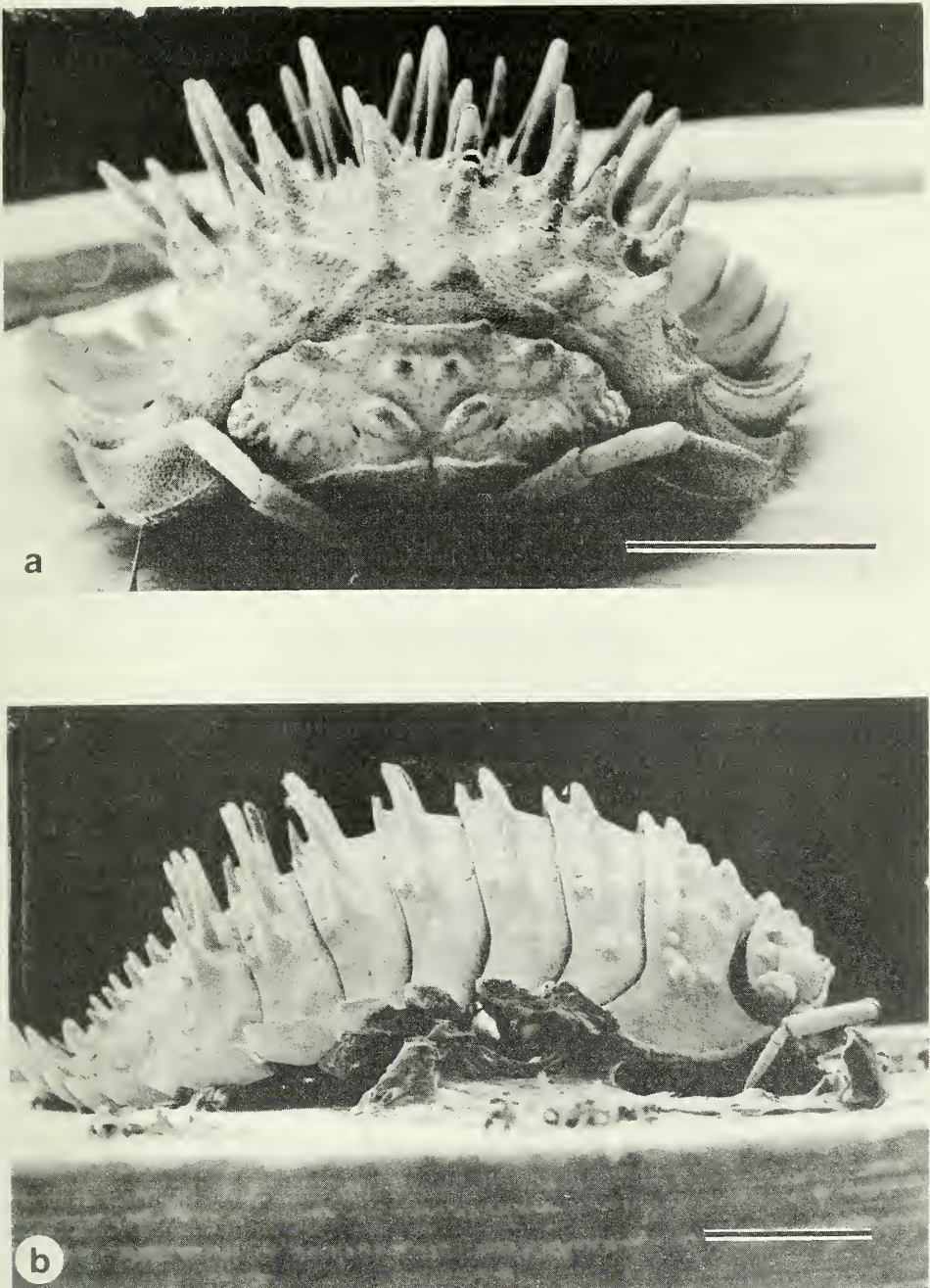


Fig. 1. Revolutus spinosus sp. nov.: a, anterior view of whole animal (Scale bar = 1 mm); b, lateral view of whole animal (Scale bar = 1 mm).

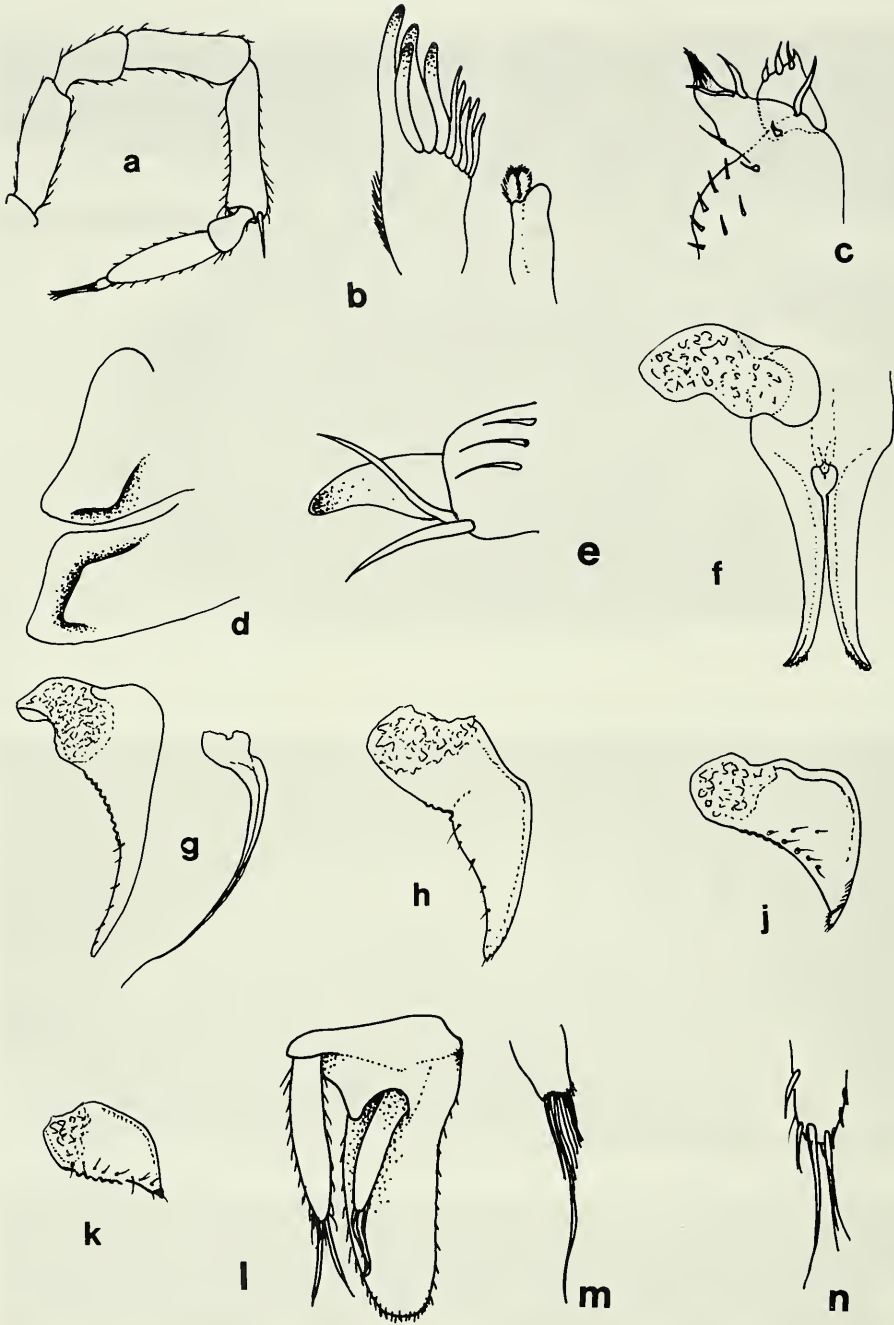


Fig. 2. *Revolutus spinosus* sp. nov.: a, antenna 2; b, maxilla 1; c, maxilliped; d, ventral surface of epimera 1 and 2; e, pereopod 1 dactylus; f, pleopod 1, exopod and endopod; g, pleopod 2, exopod and endopod; h, pleopod 3, exopod; j, pleopod 4, exopod; k, pleopod 5, exopod; l, left uropod; m, tip of uropod exopod; n, tip of uropod endopod.

them from all three genera, while the presence of uropod exopods excludes them from *Pseudolaureola*.

A new genus is therefore proposed with the type species *Revolutus spinosus* sp. nov.

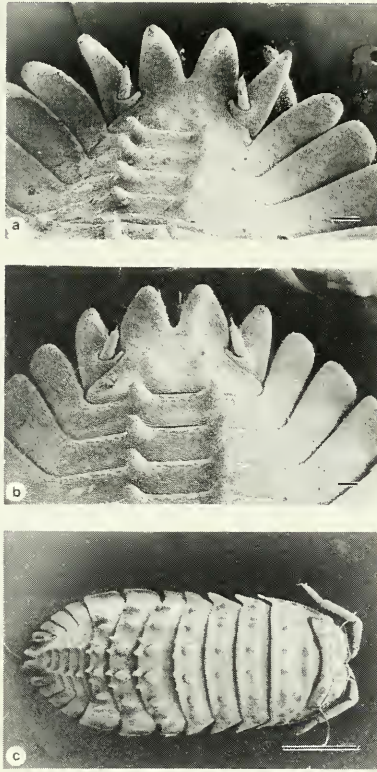


Fig. 3. *Revolutus spinosus* sp. nov.: a, pleon of male (Scale bar = 100 μ m); b, pleon of female (Scale bar = 100 μ m); c, dorsal view of female (Scale bar = 1 mm).

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